

CLAIMS

[1] A printing apparatus connected to an external device that can instruct printing of image data, said printing apparatus comprising:

an obtainment unit operable to obtain at least one of image
5 data and firmware data, the firmware data being required for updating firmware;

a judgment unit operable to judge whether to update firmware or to print image data; and

an execution unit operable to update the firmware using the
10 firmware data obtained by said obtainment unit, in the case where said judgment unit judges that the firmware should be updated, and operable to print the image data obtained by said obtainment unit, in the case where said judgment unit judges that the image data should be printed.

15

[2] The printing apparatus according to Claim 1, further comprising:

a reception unit operable to receive, from said external device, print content description data which is data written in a language
20 that can be analyzed by said printing apparatus; and

an analyzing unit operable to analyze the print content description data,

wherein said judgment unit is operable to judge that the firmware should be updated in the case where the analysis by said
25 analyzing unit indicates that a description stating that image data having a special filename should be obtained is included in the print content description data, and operable to judge that the image data should be printed in the case where the analysis by said analyzing unit indicates that a description stating that image data having a
30 special filename should be obtained is not included in the print content description data, and

said obtainment unit is operable to obtain firmware data

having a predetermined filename instead of the image data having the special filename in the case where it is judged that the firmware should be updated, and operable to obtain image data having a filename described in the print content description data in the case
5 where it is judged that the image data should be printed.

[3] The printing apparatus according to Claim 2,
wherein said obtainment unit is operable to derive an access path to the firmware data having the predetermined filename, using
10 an access path to the image data having the special filename.

[4] The printing apparatus according to Claim 2,
wherein said execution unit is operable to print the image data having the special filename in the case where the obtainment of
15 the firmware data having a predetermined filename fails.

[5] The printing apparatus according to Claim 2,
wherein the image data having the special filename is image data regarding firmware updating.

20 [6] The printing apparatus according to Claim 1, further comprising:

a reception unit operable to receive, from said external device, print content description data which is data written in a language
25 that can be analyzed by said printing apparatus; and

an analyzing unit operable to analyze the print content description data,

wherein said obtainment unit is operable to obtain image data in the case where the analysis of said analyzing unit indicates that a
30 description stating that the image data should be obtained is included in the print content description data, and

said judgment unit is operable to judge that the firmware

should be updated in the case where firmware data is added in the obtained image data, and operable to judge that the obtained image data should be printed in the case where firmware data is not added in the obtained image data.

5

[7] A firmware updating method for use in a printing apparatus to update firmware of the printing apparatus, the printing apparatus being connected to an external device that can instruct printing of image data, said method comprising:

10 an obtainment step of obtaining at least one of image data and firmware data, the firmware data being required for updating firmware;

a judgment step of judging whether to update the firmware or to print the image data; and

15 an execution step of updating the firmware using the firmware data obtained in said obtainment step, in the case where it is judged in said judgment step that the firmware should be updated, and printing the image data obtained in said obtainment step, in the case where it is judged in said judgment step that the image data
20 should be printed.

[8] The firmware updating method according to Claim 7, further comprising:

25 a reception step of receiving, from said external device, print content description data which is data written in a language that can be analyzed by said printing apparatus; and

an analyzing step of analyzing the print content description data,

30 wherein in said judgment step, it is judged that the firmware should be updated in the case where the analysis in said analyzing step indicates that a description stating that image data having a special filename should be obtained is included in the print content

description data, and it is judged that the image data should be printed in the case where the analysis in said analyzing step indicates that a description stating that image data having a special filename should be obtained is not included in the print content description data, and

in said obtainment step, firmware data having a predetermined filename is obtained instead of the image data having the special filename in the case where it is judged that the firmware should be updated, and image data having a filename described in the print content description data is obtained in the case where it is judged that the image data should be printed.

[9] The firmware updating method according to Claim 8, wherein, in said obtainment step, an access path to the firmware data having the predetermined filename is derived, using an access path to the image data having the special filename.

[10] The firmware updating method according to Claim 8, wherein, in said execution step, the image data having the special filename is printed in the case where the obtainment of the firmware data having a predetermined filename fails.

[11] The firmware updating method according to Claim 7, further comprising:

a reception step of receiving, from said external device, print content description data which is data written in a language that can be analyzed by said printing apparatus; and

an analyzing step of analyzing the print content description data,

wherein, in said obtainment step, image data is obtained in the case where the analysis in said analyzing step indicates that a description stating that the image data should be obtained is

included in the print content description data, and

in said judgment step, it is judged that the firmware should be updated in the case where firmware data is added in the obtained image data, and it is judged that the obtained image data should be printed in the case where the firmware data is not added in the obtained image data.

[12] A printing system for allowing printing of image data from a printing apparatus by executing an application program for image printing installed in an external device,

wherein said printing apparatus includes:

an obtainment unit operable to obtain at least one of image data and firmware data, the firmware data being required for updating firmware;

a judgment unit operable to judge whether to update the firmware or to print the image data; and

an execution unit operable to update the firmware using the firmware data obtained by said obtainment unit, in the case where said judgment unit judges that the firmware should be updated, and operable to print the image data obtained by said obtainment unit, in the case where said judgment unit judges that the image data should be printed.

[13] A program for use in a printing apparatus to update firmware of said printing apparatus, the printing apparatus being connected to an external device that can instruct printing of image data, said program causing a computer to execute:

an obtainment step of obtaining at least one of image data and firmware data, the firmware data being required for updating firmware;

a judgment step of judging whether to update the firmware or to print the image data; and

an execution step of updating the firmware using the
firmware data obtained in said obtainment step, in the case where it
is judged in said judgment step that the firmware should be updated,
and printing the image data obtained in said obtainment step, in the
5 case where it is judged in said judgment step that the image data
should be printed.

10

15

20